

WHAT IS CLAIMED IS:

1. A solder joint structure comprising:
a patterned conductor containing copper;
5 a solder base section comprising a Sn-Ag-Cu solder material; and
a solder joint section comprising a Sn-Zn solder material, the solder joint section being disposed on the solder base section,
10 wherein the solder joint section connects with a terminal of an electronic component by fusion bonding.
2. The solder joint structure according to claim 1, wherein the Sn-Ag-Cu solder material contains at least one
15 additive selected from the group consisting of antimony, nickel, phosphorus, germanium, and gallium.
3. A solder joint structure comprising:
a patterned conductor containing copper;
20 a solder base section comprising a Sn-Ag solder material containing at least one additive selected from the group consisting of antimony, nickel, phosphorus, germanium, gallium, aluminum, cobalt, chromium, iron, manganese, palladium, and titanium; and
25 a solder joint section comprising a Sn-Zn solder material, the solder joint section being disposed on the solder base section,
wherein the solder joint section connects with a

terminal of an electronic component by fusion bonding.

4. A method for soldering an electronic component, the method comprising:

5 (a) forming a first solder land, which is a patterned conductor, containing copper and a second solder land, the first solder land and the second solder land being formed on the same surface of a circuit board;

(b) forming a first solder section on each of the first
10 solder land and the second solder land, the first solder section comprising a Sn-Ag-Cu solder material;

(c) mounting a terminal of an electronic component chip on the first solder land;

(d) heating the first solder land and the terminal to
15 connect each other by fusion bonding;

(e) forming a second solder section on the first solder section disposed on the second solder land, the second solder section comprising a Sn-Zn solder material;

(f) inserting a lead terminal of another electronic
20 component into a terminal hole formed near the second solder land; and

(g) heating the second solder section and the lead terminal at a temperature lower than the temperature in step (d) so as to connect the lead terminal to the second solder
25 section by fusion bonding.

5. A method for soldering an electronic component, the method comprising:

(a) forming a first solder land, which is a patterned conductor, containing copper and a second solder land, the first solder land and the second solder land being formed on the same surface of a circuit board;

5 (b) forming a first solder section on each of the first solder land and the second solder land, the first solder section comprising the additive-containing Sn-Ag-Cu solder material of claim 2;

(c) mounting a terminal of an electronic component chip
10 on the first solder land;

(d) heating the first solder land and the terminal to connect each other by fusion bonding;

(e) forming a second solder section on the first solder section disposed on the second solder land, the second solder
15 section comprising a Sn-Zn solder material;

(f) inserting a lead terminal of another electronic component into a terminal hole formed near the second solder land; and

(g) heating the second solder section and the lead
20 terminal at a temperature lower than the temperature in step (d) so as to connect the lead terminal to the second solder section by fusion bonding.

6. A method for soldering an electronic component, the
25 method comprising:

(a) forming a first solder land, which is a patterned conductor, containing copper and a second solder land, the first solder land and the second solder land being formed on

the same surface of a circuit board;

(b) forming a first solder section on each of the first solder land and the second solder land, the first solder section comprising the additive-containing Sn-Ag solder

5 material of claim 3;

(c) mounting a terminal of an electronic component chip on the first solder land;

(d) heating the first solder land and the terminal to connect each other by fusion bonding;

10 (e) forming a second solder section on the first solder section disposed on the second solder land, the second solder section comprising a Sn-Zn solder material;

(f) inserting a lead terminal of another electronic component into a terminal hole formed near the second solder
15 land; and

(g) heating the second solder section and the lead terminal at a temperature lower than the temperature in step.